

22. (Not Amended) A method for manufacturing the image-forming apparatus according to Claim 20, further comprising a getter flash step of activating an evaporable getter after the baking step.

23. (Not Amended) A method for manufacturing the image-forming apparatus according to Claim 22, further comprising the step of degassing the evaporable getter by heating the evaporable getter prior to the getter flash step.

24. (Not Amended) A method for manufacturing the image-forming apparatus according to Claim 23, wherein the degassing step is executed prior to the baking step.

REMARKS

Claims 1-24 are presented for consideration, with Claims 1 and 13 being independent.

The Independent claims have been amended to further distinguish Applicants' invention from the cited art.

The amendments to the claims were not presented earlier as it was believed that the previously presented claims would be found allowable. This Amendment does not add any additional claims. Moreover, the Examiner's familiarity with the subject matter of the present application will allow an appreciation of the significance of the amendments herein without undue expenditure of time and effort. Finally, the Amendment does not raise new issues requiring further consideration or search. Accordingly, it is believed that entry of the Amendment is appropriate.

Claims 1, 2, 4-8, 10-14, 16-20 and 22-24 stand rejected under 35 U.S.C. §103 as allegedly being obvious over Mitzutake '538 in view of Kato '708, Dynka '825 and Banno (JP '731). In addition, Claims 9 and 21 were rejected as allegedly being obvious over Mitzutake, Kato, Dynka and further in view of Wallace '563. These rejections are respectfully traversed.

Claim 1 of Applicants' invention relates to a method for manufacturing an airtight vessel, and includes the steps of fabricating an airtight vessel connected to an evacuation tube, evacuating the inside of the airtight vessel through the evacuation tube while simultaneously baking the entire airtight vessel, and activating a getter disposed in the airtight vessel. As amended, Claim 1 recites that after initiating the evacuation step, in a condition where the getter is activated, continuing the evacuation step and sealing the evacuation tube by heating the evacuation tube.

Claim 13 is directed to a method for manufacturing an image forming apparatus using an airtight vessel containing a plurality of electron emitting devices and image-forming members, and includes the same steps as in Claim 1.

In accordance with Applicants' claimed invention, gasses discharged from the evacuation tube will be not be absorbed into the vessel. This results in an airtight vessel having a long life and providing superior performance.

As discussed in the previous Amendment of January 28, 2002, the primary citation to Mitsutake relates to an electron beam apparatus and an image forming apparatus that includes an airtight envelope. An exhaust pipe of the envelope is connected to a vacuum pump and used to evacuate the envelope. The Office Action asserts that Mitsutake teaches activating a getter immediately before sealing the exhaust tube or, alternatively, activating a getter immediately after sealing the exhaust tube.

The Office Action also takes the position that while Mitsutake does not explicitly disclose simultaneously baking the entire airtight vessel while evacuating, it is routine practice to simultaneously bake the vessel while evacuating in order to thoroughly evacuate the vessel, relying on Dynka and Banno for this teaching.

In support of the rejection, the Office Action states on page 4 (last paragraph) that "it is routine to continue the baking and pumping until the exhaust tube has been sealed." It is respectfully submitted, however, that this statement is unsupported by the cited art. The Office Action also attempts to rely on Banno for a teaching of continuing the evacuating step during the sealing of the exhaust tube. Banno clearly discloses, however, that the second process of sealing the exhaust tube is performed "after" vacuum exhaustion by the first process. If the evacuating step were to be continued during the sealing step, Banno would explicitly say so--as it does with disclosing the first process of baking and evacuating "at the same time" (see page 2, lines 4-12).

Accordingly, it is submitted that even assuming, arguendo, it is inherent that absorbed gases are outgassed from the exhaust tube during sealing, neither Mitsutake nor Banno teach or suggest that it is "routine" to continue the baking and pumping until the exhaust tube has been sealed. These references fail, therefore, to teach or suggest sealing the evacuation tube while evacuating the vessel and simultaneously baking the vessel.

These deficiencies in Mitsutake and Banno are not compensated for by Dynka or Kato.

In Dynka the method for evacuating and sealing a display envelope includes an extended bake-out process and a nonevaporable getter.

Kato, which relates to an electron emitting device, was relied upon for its teaching of activating a getter prior to sealing the exhaust tube. As understood, however, in Kato the "sealing" refers to the assembling of anode 102, cathode 106 and side members 112 to form the emitting device.

Accordingly, without conceding the propriety of combining the art in the manner proposed in the Office Action, such a combination still fails to teach or suggest Applicants' claimed invention. Thus, reconsideration and withdrawal of the rejection of Claims 1, 2, 4-8, 10-14, 16-20 and 22-24 under 35 U.S.C. §103 is respectfully requested.

The tertiary citation to Wallace relates to a method of making a field-emission device and was cited for its teaching of providing means for reactivating a nonevaporable getter.

Wallace fails, however, to compensate for the deficiencies in the citations discussed above with respect to Applicants' independent claims. Therefore, reconsideration and withdrawal of the rejection of Claims 9 and 21 under 35 U.S.C. §103 is also respectfully requested.

Accordingly, it is submitted that Applicants' invention as set forth in independent Claims 1 and 13 is patentable over the cited art. In addition, dependent Claims 2, 4-12, 13, 14 and 16-24 set forth additional features of Applicants' invention. Independent consideration of the dependent claims is respectfully requested.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Four Times Amended) A method for manufacturing an airtight vessel, comprising the steps of:

- a) fabricating an airtight vessel connected to an evacuation tube;
- b) evacuating the inside of the airtight vessel through the evacuation tube while simultaneously baking the entire airtight vessel,
- c) activating a getter disposed in the airtight vessel; and
- d) after [activation of the getter and during the evacuating] initiating the evacuation step, in a condition where the getter is activated, continuing the evacuation step and sealing the evacuation tube by heating the evacuation tube.

13. (Four Times Amended) A method for manufacturing an image-forming apparatus using an airtight vessel containing a plurality of electron emission elements and image-forming members comprising the steps of:

- a) fabricating an airtight vessel connected to an evacuation tube;
- b) evacuating the inside of the airtight vessel through the evacuation tube while simultaneously baking the entire airtight vessel,
- c) activating a getter disposed in the airtight vessel; and
- d) after [activation of the getter and during the evacuating] initiating the evacuation step, in a condition where the getter is activated, continuing the evacuation step and sealing the evacuation tube by heating the evacuation tube.

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